

### **Remarks**

By this Amendment, claims 1, 5, 15-17, 19, 28, 31-35, 37-40 are amended, claim 4 is canceled, and the remaining claims are unchanged. After entry of this Amendment, claims 1-3 and 5-43 are pending in the present application. Reconsideration is requested in view of the amendments and the following remarks.

#### **I. Allowable Subject Matter**

Applicant thanks the Examiner for indicating that claim 43 is allowed and claims 4, 5, 7, 12, 13, 17-22, and 41 are objected to for depending upon a rejected base claim but would be allowable if re-written in independent form.

Claims 17 and 19 have been re-written in independent form incorporating the limitations of these claims as previously presented and should now be allowed. Claim 18 depends from claim 17 and should be allowed along with claim 17. Claims 20-22 depend from claim 19 and should be allowed along with claim 19.

#### **II. Rejection of Claims 1-3, 6, 8-11, 14-16, 23-40 and 42**

Claims 1-3, 6, 8-11, 14-16, 23-40 and 42 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,804,983 to Nakajima et al. (Nakajima). Applicant traverses this rejection and requests that it be withdrawn.

##### **Claims 1-3, 6, 8-11, and 14:**

Independent claim 1 has been re-written to include the subject matter previously recited in original claim 4, which was objected to for depending upon a rejected base claim. Thus, claim 1 should now be allowed. Claims 2, 3, 6, 8-11 and 14 depend either directly or indirectly from claim 1 and should also be allowed.

##### **Claims 15, 16, and 23-27:**

Claim 15 recites a method for testing semiconductor wafers using a probe station having a head stage. The method comprises mounting an adapter member to an upper surface of the head stage, positioning a probe-card assembly in an aperture defined in a docking-equipment-mounting member having docking equipment mounted thereon, and coupling the docking-equipment-mounting member to the adapter member. Claim 15 has been amended to further recite that the adapter member has an aperture and a recessed portion formed in the upper surface

thereof and surrounding the aperture, and the docking-equipment-mounting member is positioned in the recessed portion of the adapter member. Nakajima neither teaches nor suggests the method recited in claim 15.

As shown in FIG. 3 of Nakajima, an insert ring 18 is mounted to the head stage 17 of the probe station. The probe card 22 is supported by a probe card holder 25, which in turn is mounted to the lower surface of the insert ring 18. Assuming for purposes of discussion only that the probe card holder 25 is a docking-equipment-mounting member and the insert ring 18 is an adapter member, the probe card holder 25 is not positioned in a recessed portion in the upper surface of the insert ring, as required by claim 15. Also, there is no docking equipment mounted to the probe card holder. (The ball hinge mechanism 52, if this is considered to be docking equipment, is mounted to the insert ring.)

The Nakajima device also includes a contact ring 26 supported in a recess in the upper surface of the insert ring 18, but the probe card 22 is not positioned in the aperture of the contact ring and there is no docking equipment mounted to the contact ring. Thus, the contact ring does not satisfy the docking-equipment-mounting member limitation of claim 15.

Accordingly, claim 15 is not anticipated or rendered obvious by Nakajima and should be allowed.

Claims 16 and 23-27 depend from claim 15 and are allowable for the reasons given above in support of claim 15 and because each dependent claim sets forth an independently patentable combination of features.

For example, claim 16 further recites, *inter alia*, docking a tester to the docking equipment mounted on the docking-equipment-mounting member. The action contends that the hinge mechanism 52 in Nakajima constitutes docking equipment. Even assuming this is true, as shown in FIG. 3, when the test head 27 is in the test position, it clearly does not dock with the hinge mechanism 52.

Claims 28-33:

Claim 28 is directed to a method for testing semiconductor wafers using a probe station having a head stage. Claim 28, as amended, recites coupling a probe-card-support device to an upper surface of the head stage, the probe-card-support device comprising a first plate and a second plate nested within the first plate, the second plate defining an aperture and a rim

circumscribing the aperture. Claim 28 also recites supporting a probe-card assembly on top of the rim of the second plate (added language underlined).

In Nakajima, the probe card 22 is supported on top of the inner rim portion of the card holder 25. However, the card holder 25 is mounted to the underside of the insert ring 18 and therefore does not satisfy the limitation of being nested within a first plate.

Accordingly, claim 28 is not anticipated or rendered obvious by Nakajima and should be allowed.

Claims 29-33 depend from claim 28 and are allowable for the reasons given above in support of claim 28 and because each dependent claim sets forth an independently patentable combination of features.

For example, claim 30 further recites mounting docking equipment to the probe-card-support device and docking a tester to the docking equipment. In the rejection of claim 30, the action does not identify any components of Nakajima as constituting docking equipment mounted to a probe-card support device. In FIG. 3 of Nakajima, the only components that are shown to contact the test head 27 are pogo pins 26a, which function to electrically connect the test head 27 to probes 23 of the probe card 22. If Nakajima utilizes some form of docking equipment in this embodiment, it is not shown or described.

Claim 31 has been amended to recite removing the first plate and the second plate from the head stage; coupling another probe-card-support device to the head stage; and supporting another probe-card assembly on the latter probe-card-support device. Nakajima neither teaches nor suggests the method set out in claim 31.

Claims 34-39:

Claim 34 recites an apparatus comprising, *inter alia*, a probe-card-support device for supporting a probe-card assembly when testing a semiconductor wafer with a probe station. Claim 34 has been amended to further specify that the probe-card-support device comprises a first plate for supporting the probe-card assembly and a second plate for supporting the first plate. The second plate is configured to be mounted to and completely removable from the head stage and has a major aperture and a recessed portion surrounding the major aperture. The first plate is adapted to fit within the recessed portion and has an upper surface that is planar with the upper surface of the second plate when disposed in the recessed portion.

In Nakajima, the probe card 22 is supported on top of the inner rim portion of the card holder 25. Unlike claim 34, the card holder 25 is mounted to the underside of the insert ring 18 and therefore does not satisfy the limitations of being adapted to fit within a recessed portion of a second plate and having an upper surface that is planar with the upper surface of the second plate.

Accordingly, claim 34 is not anticipated or rendered obvious by Nakajima and should be allowed.

Claims 35-39 depend from claim 34 and are allowable for the reasons given above in support of claim 34 and because each dependent claim sets forth an independently patentable combination of features.

Claims 40 and 42:

Claim 40 recites a system for testing semiconductor devices comprising, *inter alia*, a probe station, a tester for docking with the probe station during testing of a semiconductor device, an adapter member, a probe-card-support member, and docking equipment mounted to the probe-card-support member. Claim 40 has been amended to specify that the docking equipment is adapted to “mate with docking equipment on the tester.”

In the rejection of claim 40, the action identifies Nakajima’s hinge mechanism 52 as constituting docking equipment. Even assuming this is true, as shown in FIG. 3, when the test head 27 is in the test position, the hinge mechanism 52 does not mate with any docking equipment on the test head 27.

Accordingly, claim 40 is not anticipated or rendered obvious by Nakajima and should be allowed.

Claim 42 depends from claim 40 and is allowable for the reasons given above in support of claim 40 and because claim 42 sets forth an independently patentable combination of features.


### III. Conclusion

The present application is in condition for allowance and such action is respectfully requested. If any further issues remain concerning this application, the Examiner is invited to call the undersigned to discuss such matters.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

By

  
\_\_\_\_\_  
Jeffrey B. Haendler  
Registration No. 43,652

One World Trade Center, Suite 1600  
121 S.W. Salmon Street  
Portland, Oregon 97204  
Telephone: (503) 595-5300  
Facsimile: (503) 228-9446